Amendments to the Claims

1-17. (Canceled)

18. (Previously presented) A resonant cavity light emitting device including:

a stack of group III-nitride layers having no tilt-boundaries and having a dislocation density less than 10^4 cm^{-2}, the stack including a first mirror sub-stack defining a distributed Bragg reflector and an active region; and

a mirror cooperating with the first mirror sub-stack to define a resonant cavity inside of which the active region is disposed.

19. (Withdrawn) The resonant cavity light emitting device as set forth in claim 18, wherein the stack of group III-nitride layers have a minimum lateral dimension greater than 0.1 cm.

20. (Original) The resonant cavity light emitting device as set forth in claim 18, wherein the mirror includes:

a reflective stack of one or more layers disposed over a surface of the stack of group III-nitride layers distal from the first mirror sub-stack.

21. (Original) The resonant cavity light emitting device as set forth in claim 20, wherein the reflective stack includes:

a reflective metal layer.

22. (Original) The resonant cavity light emitting device as set forth in claim 21, further including:

a discontinuous electrode disposed on the surface of the stack of group III-nitride layers distal from the first mirror sub-stack, the discontinuous electrode being in electrical contact with the stack of group III-nitride layers.

23. (Original) The resonant cavity light emitting device as set forth in claim 18, wherein the mirror includes:

a second mirror sub-stack of group III-nitride layers defining a distributed Bragg reflector.

24. (Original) The resonant cavity light emitting device as set forth in claim 18, wherein the mirror includes:

a dielectric stack defining a distributed Bragg reflector.

25. (Original) The resonant cavity light emitting device as set forth in claim 18, wherein the stack of group III-nitride layers has a dislocation density less than 10^3 cm^{-2}.

26. (Original) The resonant cavity light emitting device as set forth in claim 18, wherein the stack of group III-nitride layers has a dislocation density less than 100 cm^{-2}.

27. (Original) The resonant cavity light emitting device as set forth in claim 18, wherein the stack of group III-nitride layers include trenches formed therein, each trench extending at least through the active region to define laterally spaced islands of the active region, portions of the stack of group III-nitride layers extending between the laterally spaced islands of the active region containing substantially no edge dislocation arrays.

28-29. (Canceled)

30. (Original) The resonant cavity light emitting device as set forth in claim 18, wherein the active region of the stack of group III-nitride layers includes:

a region of indium-containing quantum dots.

31. (Original) The resonant cavity light emitting device as set forth in claim 18, further including:

a single-crystal gallium nitride substrate substantially free of tilt-boundaries on which the stack of group III-nitride layers is disposed, the single-crystal gallium nitride substrate having a dislocation density less than 10^4 cm^{-2}.

32. (Original) The resonant cavity light emitting device as set forth in claim 31, wherein the single-crystal gallium nitride substrate has an optical absorption

coefficient that is generally less than 5 cm^{-1} over a spectral range between 465 nm and 700 nm.

33. (Original) The resonant cavity light emitting device as set forth in claim 32, wherein the single-crystal gallium nitride substrate is electrically conductive.

34. (Original) The resonant cavity light emitting device as set forth in claim 33, wherein the electrically conductive single-crystal gallium nitride substrate has a resistivity of less than 10 ohm-cm.

35. (Currently amended) A resonant cavity light emitting device including:

a stack of group III-nitride layers including an active region;

a single-crystal gallium nitride substrate substantially free of tilt-boundaries on which the stack of group III-nitride layers is disposed, the single-crystal gallium nitride substrate having a dislocation density less than 10^4 cm^{-2}; and

first and second mirrors defining a resonant cavity inside of which the active region is disposed, light produced by the active region resonating in the resonant cavity, at least one of the first and second mirrors including a distributed Bragg reflector.

36. (Withdrawn) The resonant cavity light emitting device as set forth in claim 35, further including:

a luminescent material or dopant disposed on or in the single crystal gallium nitride substrate that produces luminescence light of wavelength in a range between 300 nm and 1000 nm inclusive, the luminescence light being spectrally different from the light produced by the active region.

37. (Withdrawn) The resonant cavity light emitting device as set forth in claim 36, wherein the luminescent material or dopant comprises at least one of Ti, V, Cr, Mn, Fe, Co, or a rare earth metal.

38. (Withdrawn) The resonant cavity light emitting device as set forth in claim 35, further including:

a third mirror cooperating with one of the first and second mirrors to define a second resonant cavity, the luminescence light resonating in the second resonant cavity.

39. (Withdrawn) The resonant cavity light emitting device as set forth in claim 38, wherein each of the first, second, and third mirrors is independently selected from a group consisting of:

a semiconductor distributed Bragg reflector defined by the stack of group III-nitride layers,

a mixed oxide distributed Bragg reflector, and

a metallic or partially-metallized mirror.

40. (Original) A resonant cavity light emitting device including:

a single-crystal gallium nitride substrate having a characteristic absorption peak at about 3175 cm^{-1} with an absorbance per unit thickness greater than about 0.01 cm^{-1};

a stack of group III-nitride layers disposed on the single-crystal gallium nitride substrate, the stack including a first mirror sub-stack and an active region; and

a mirror cooperating with the first mirror sub-stack to define a resonant cavity inside of which the active region is disposed.

41. (Original) The resonant cavity light emitting device of claim 40, wherein the single-crystal gallium nitride substrate has a fluorine concentration greater than about 0.04 ppm.

42. (Original) The resonant cavity light emitting device of claim 41, wherein the single-crystal gallium nitride substrate is substantially free of tilt-boundaries and has a dislocation density less than 100 cm^{-2}.

43-49. (Canceled)

50. (Previously presented) The resonant cavity light emitting device as set forth in claim 18, wherein the stack of group III-nitride layers has a (11$\underline{2}$0) oriented principal surface.

51. (Previously presented) The resonant cavity light emitting device as set forth in claim 18, wherein the stack of group III-nitride layers has a (11$\bar{2}$00) oriented principal surface.

52. (Previously presented) The resonant cavity light emitting device as set forth in claim 18, wherein the stack of group III-nitride layers has a (0001) oriented principal surface.

53. (Previously presented) The resonant cavity light emitting device as set forth in claim 18, wherein the stack of group III-nitride layers has a (000$\bar{1}$) oriented principal surface.

54. (New) A resonant cavity light emitting device including:

a stack of group III-nitride layers including an active region;

a single-crystal gallium nitride substrate substantially free of tilt-boundaries on which the stack of group III-nitride layers is disposed, the single-crystal gallium nitride substrate having a dislocation density less than 10^2 cm^{-2}; and

first and second mirrors defining a resonant cavity inside of which the active region is disposed, light produced by the active region resonating in the resonant cavity.

55. (New) A resonant cavity light emitting device including:

a stack of group III-nitride layers including an active region;

a single-crystal gallium nitride substrate substantially free of tilt-boundaries on which the stack of group III-nitride layers is disposed, the single-crystal gallium nitride substrate having a dislocation density less than 10^4 cm^{-2}; and

first and second mirrors arranged parallel with the active region and defining a vertical resonant cavity inside of which the active region is disposed, light produced by the active region resonating in the resonant cavity.